

CLAIMS

1. A cable operated drum brake having:

- an internal brake operating lever for connection with a brake operating cable,
- a cable attachment tube projecting from a backplate of the brake,
- said operating cable having a cable inner with a latching formation on an end thereof and a cable outer sleeve,
- a quick-attach device for maintaining the latching formation in connection with the lever.
- an end portion of the operating cable being slideable towards the backplate within the tube up to a first position at which further movement towards the backplate is stopped by contact between an abutment on the tube and a co-operating abutment on the cable outer sleeve, said first position ensuring that the latching formation has moved passed the quick-attach device,
- the end portion cable being subsequently moveable away from the backplate within the tube to a second position in which the latching formation on the cable inner is fully connected with the operating lever, and
- a fastening means to lock the end portion of the cable in said second position relative to the tube to maintain the latching formation fully connected with the operating lever during subsequent operation of the brake.

2. A drum brake according to claim 1 in which the quick-attach device is provided on a parking brake lever pivoted on a brake shoe.
3. A drum brake according to claim 1 in which the quick-attach device comprises a resilient spring member located in a passage between a pair of co-operating levers acting between the adjacent ends of a pair of brake shoes or the ends of a single generally U-shaped shoe, the spring member being arranged to deflect the latching formation to a latching position on one of the levers and to subsequently ensure that the latching formation does not disengage the latching position.
4. A drum brake according to any one of claims 1 to 3 in which the abutment on the tube is formed by the end of the tube through which cable slides.
5. A drum brake according to any one of claims 1 to 3 in which the abutment on the tube comprises an internal shoulder formed in a bore of the tube in which the cable slides.
6. A drum brake according to any one of claims 1 to 3 in which the abutment on the tube comprises an end of a sleeve in a bore of the tube in which the cable slides.
7. A drum brake according to any one of claims 4 to 6 in which the cable outer sleeve is provided with an end fitting having an abutment which co-operates with the end of the tube or the internal shoulder or the sleeve.
8. A drum brake according to claim 7 in which the fastening means comprises a clip which is engaged in a groove in the end fitting when the cable is in the second position, the clip being held against the end of the tube to prevent movement away from the first and second position.

9. A drum brake according to claim 8 in which the clip is held against the end of the tube by a cap which is clipped over the clip and radially projecting flange adjacent the end of the tube.
10. A drum brake according to claim 9 in which the clip and cap are formed as a single component both engaging the groove in the end fitting.
11. A drum brake according to claim 8 in which the clip is held against the end of the tube by integral tangs on the clip which engage a radially projecting flange adjacent the end of the tube.
12. A drum brake according to claim 8 in which the clip is held against the end of the tube by an internally threaded collar held captive on the end fitting which engages an external thread on the end portion of the tube.
13. A drum brake according to claim 7 in which the fastening means comprises a wire clip which extends generally perpendicular to the tube and engages a groove in the end fitting and a hole or a slot or slots in the tube.
14. A drum brake according to any one of claims 1 to 13 in which the attachment tube is welded to the backplate.
15. A drum brake according to any one of claims 1 to 13 in which an attachment sleeve is provided which has a radially extending flange for engagement with the inside of the backplate and which projects into an end portion of the attachment tube adjacent the backplate and which incorporates snap connectors which snap into a fastening formation formed on the inside of the end portion of the tube to hold the tube against the backplate.
16. A drum brake according to claim 15 in which the attachment sleeve is used to hold the attachment tube to the backplate prior to welding.

17. A drum brake according to claim 15 or 16 in which the attachment sleeve has an internal bore of the same diameter as the internal bore of the tube to avoid forming ledges or other projections on which dirt may lodge or which may damage any cable sealing boot which may be fitted on the inside of the backplate.
18. A drum brake according to any one of claims 15 to 17 in which the end of the attachment sleeve on the inside of the backplate has formations thereon (eg, axially spaced ribs) which assist in the attachment thereto of a cable guidance spring which guides the inner of the cable towards the quick-attach device.
19. A drum brake according to claim 18 in which the backplate has one or more formations thereon which support the guidance spring so that the cable inner follows a smoothly curving path on its way to the quick-attach device.
20. A drum brake according to any one of claims 1 to 19 in which the attachment tube may include slots or other openings to allow any water which reaches the inside of the tube to drain out.
21. A drum brake according to any one of claims 7 to 20 in which the cable is provided with a rubber boot which at one end seals to the end fitting on the outer cable sleeve and at its other end seals onto the cable inner.
22. A method of attaching an operating cable having a cable inner with a latching formation on an end thereof and a cable outer sleeve, to a drum brake having a cable attachment tube projecting from a backplate of the brake, an internal brake operating lever and a quick-attach device for maintaining the latching formation in connection with the lever, the method comprising:
  - sliding an end portion of the operating cable towards the backplate within the tube up to a first position at which further movement towards

the backplate is stopped by contact between an abutment on the tube and a co-operating abutment on the cable outer sleeve, said first position ensuring that the latching formation has moved passed the quick-attach device,

- subsequently moving the end portion cable away from the backplate within the tube to a second position in which the latching formation on the cable inner is fully connected with the operating lever, and
  - engaging fastening means to lock the end portion of the cable in said second position relative to the tube to maintain the latching formation fully connected with the operating lever during subsequent operation of the brake.
23. A cable operated drum brake constructed and arranged substantially as hereinbefore described with reference to and as shown in Figure 1 or 2 or 3 or 4 or 5 or 6 or 7 and 8 of the accompanying drawings.